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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,025	10/22/2003	Jeonghee Yi	ARC920030026US1	6416

7590 05/02/2007  
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EXAMINER
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COLUCCI, MICHAEL C

ART UNIT	PAPER NUMBER
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2609

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/692,025

Applicant(s)

YI ET AL.

Examiner

Michael C. Colucci

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/22/2003.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

Claim 3 is not dependent upon a preceding claim but is in fact dependent on it self. An "opinion skeleton" is not mentioned in claim 1 and was in fact introduced for the first time within claim 2. Given this information, claim 3 will be construed to be dependent on claim 2.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

### **Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 7 and 18 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Holtzman et al, PG PUB US 20020062368 A1.

Re claim 1, a method for extracting opinions about a subject of interest from a text document having a plurality of sentences, the subject associated with a plurality of features, the method comprising the steps of:

*(Holtzman et al disclose a method and system for retrieving opinion information from an electronic message. Page 2 [0012] lines 1-16)*

extracting from the document feature terms related to the features most relevant to the subject;

*(Holtzman et al disclose an electronic discussion system that collects, analyzes, and stores message information. The "message information" is general to be construed as individual words or phrases. An example of the description of a message and it's relation to a topic is disclosed in [0078]. Holtzman et al also disclose a relevance score dependent on the relevance between a message and a discussion forum or thread. The high relevance score for a phrase or message will determine the appropriate classification. page 3 [0045], page 4 [0052], page 6 [0078])*

for each sentence referring to a feature term, determining whether the sentence includes an opinion polarity about the feature term; and

*(Holtzman et al disclose the determination of the polarity of information within a message. Determining polarity involves classifying message information as positive, neutral, or negative. Page 4 [0052])*

for each sentence referring to the subject, determining whether the sentence includes an opinion polarity about the subject.

*(Holtzman et al disclose the determination of the polarity of a message as a whole dependant on the information within the message itself. Page 9 [0121])*

Re claim 2, the method as recited in claim 1 further comprising the step of determining an opinion skeleton for each opinion to provide support details for said

opinion. *(An opinion skeleton when read in light of the specification is a series of words extracted from text that map the opinion structure. Holtzman et al illustrate how the classification of the hierarchal structure of the extracted information from the message is carried out. This structure is formed by the relationship of words in the message information. In order to classify data, a relationship would have been established between words (feature and opinion terms) and topics (subjects) prior to the hierarchal report. Fig. 3 and [0121])*

Re claim 3, the method as recited in claim 3, wherein the opinion skeleton includes a feature term and an opinion term referring to said feature term. *(see analysis for claim 2)*

Re claim 4, the method as recited in claim 3, wherein the opinion skeleton includes the subject and an opinion term referring to said subject. *(see analysis for claim 2)*

Re claim 5, the method as recited in claim 3, wherein the opinion skeleton includes a feature term, an opinion term, and a relationship between the feature term and the opinion term. *(see analysis for claim 2)*

Re claim 6, the method as recited in claim 3, wherein the opinion skeleton includes the subject, an opinion term, and a relationship between the subject and the opinion term. *(see analysis for claim 2)*

Re claim 7, the method as recited in claim 1, wherein the step of extracting the feature terms includes the steps of:

determining a plurality of candidate feature terms associated the subject;  
calculating a relevance score for each candidate feature term; and  
identifying the most relevant feature terms from the candidate feature terms  
based on the relevance scores.

*(Holtzman et al disclose a relevancy score for relevancy ranking dependant on the nature of each topic. The highest score determines the most relevant topic. page 6 [0079] and [0082])*

Re claim 18, the method as recited in claim 1, wherein each feature term has a "part-of" relationship with the subject. *(When read in light of the specification, a "part-of" relationship is not further limited and is broad enough to be construed as generally having a relationship with the subject. Because of the lack of limitation, a part of something can be construed as an attribute of something. Without being further limited, a "part of" and/or "attribute of" can mean having a relationship between feature and feature/subject. For example, an attribute particularizes or limits something as a whole. Therefore having an "attribute of" can be construed as a having a "part of". One attribute of a book is the text within the book. The text of a book is also a part of the book inherently. Therefore, the attributes or parts of a whole can be combined to formulate the corresponding whole. Holtzman et al broadly describes information within a message. This is inclusive of any relationship between feature and subject terms due to a lack of limitation present. page 9 [0121])*

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Re claim 19, the method as recited in claim 1, wherein each feature term has an "attribute-of" relationship with the subject. *(There is no limitation mentioned that further limiting claim 19, particularly an "attribute of". see analysis for claim 18)*

Re claim 20, the method as recited in claim 1, wherein each feature term has an "attribute-of" relationship with the associated feature. *(An associated feature can be another term within the text or the subject of the text itself. see analysis for claims 18 and 19)*

Claim 21 has been analyzed and rejected with respect to claim 1. Holtzman et al discloses both the method and system.

Claim 22 has been analyzed and rejected with respect to claim 1. Holtzman et al discloses both the method and apparatus.

#### **Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holtzman et al as applied to claim 7 and further in view of Budzinski 6,138,087.

Re claim 8, Holtzman et al discloses a relevancy score as a measure of the degree to which a message is relevant to a topic. However Holtzman et al fails to disclose a noun phrase as the object being scored. Budzinski discloses a realization of whether a term is a noun, verb, adjective, etc. A noun phrase is broad enough to be

construed as a phrase containing a noun. A noun phrase is not limited as to exclude adjectives. Therefore, the combined teaching of Holtzman et al and Budzinski would have rendered obvious utilization of a method for recognizing that a selected portion of a text is a noun phrase (Budzinski, Col. 19 lines 35-38).

### **Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Holtzman et al* as applied to claim 6 above and further in view of Chou et al 5,797,123.

Re claim 9, Holtzman et al discloses a relevancy score but fails to reveal any mathematical algorithm, function, and/or test used to acquire the score. Chou et al discloses a likelihood ratio test based on each sub-word of a given phrase. The likelihood ratio test function is also discretely defined by Chou et al. Therefore, the combined teaching of Holtzman et al and Chou et al would have rendered obvious utilization of a method for calculating the relevancy of a word and scoring it based off of the likelihood ratio test. (Chou et al, Col. 7 line 66 – Col.8 line 9, Equ. 1).



**Claim Rejections - 35 USC § 103**

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10, 12, and 14 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Holtzman et al* as applied to claim 1 and further in view of Fan 5,371,673.

Re claim 10, Holtzman et al discloses the extraction of information from text and the identification of an opinion as well as the opinion polarity (positive, neutral, or negative mood). Holtzman et al fails to disclose the use of a dictionary to analyze input text strings. Fan discloses this system that determines opinion(s) from text by comparing terms within a text to a dictionary array. Fan also discloses a method to parse text to identify information. Therefore, the combined teaching of Holtzman et al and Fan would have rendered obvious utilization of a method to identify opinions and opinion polarity through the comparison of data stored within a dictionary. (Col. 9 line 17-21, Col. 27 line 66 – Col. 28 line 4)

Re claim 12, Fan discloses a set of rules that filter out irrelevant text within a message in relation to the opinion phrase. However, when read in light of the specification an opinion rule is a member of an opinion rule base, which is used to identify terms within a text, as is the goal of the opinion dictionary. Therefore, the combined teaching of Holtzman et al and Fan would have rendered obvious utilization

of a method to identify opinions and opinion polarity through the comparison of data stored within a dictionary as well as a set of rules that omit non-relevant terms within a text. (Col. 29 line 50-56)

Re claim 14, Holtzman et al does not disclose the use of an opinion rule base, however, when read in light of the specification, the function of an opinion rule base is synonymous with the function of an opinion dictionary. Fan describes a rule set that filters out irrelevant terms relevant to the opinion. A relationship term is broad as to be construed as the linkage between two words in a sentence. For example, an adjective describing a noun. When read in light of the specification, a "target of the opinion term" is construed as the opinion term, or the term that is assigned an opinion. Polarity of the opinion is synonymous with opinion polarity. Therefore, the combined teaching of Holtzman et al and Fan would have rendered obvious utilization of an opinion rule base (dictionary) to identify opinion and opinion polarity of a term or word within a text. (Col. 29 line 50-56)

Re claim 15, when read in light of the specification, a "source of the opinion" is defined as a portion of a sentence that will be assigned polarity. This will be construed as the opinion polarity of the sentence. The "relationship term" and "target of the opinion" have been analyzed in claim 14. Therefore, the combined teaching of Holtzman et al and Fan would have rendered obvious utilization of an opinion rule base (dictionary) to identify opinionated term, opinion, and opinion polarity of a term or word within a text. (Col. 29 line 50-56)

Re claim 16, see analysis for claim 14.

Re claim 17, see analysis for claim 15.

### **Claim Rejections - 35 USC § 103**

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holtzman et al and Fan as applied to claims 10 and 12 and further in view of Budzinski 6,138,087.

Re claim 11, Holtzman et al discloses the recognition of opinions from a text. Fan discloses the use of dictionary to compare terms within text. However both Holtzman et al and Fan do not disclose the description of grammatical components and the process involved when a match is not found. Budzinski discloses the identification of nouns, adjectives, prepositions, and verb phrases (Col. 19 lines 35-65). Budzinski also discloses that when there is not a match of a verb association within a sentence to any term in the dictionary, adjectives are then searched (Col. 85 line 55-66). The use of the word "modifier" can have a broad interpretation even when read in light of the specification. Budzinski discloses the use of a modifier. An example of the use disclosed by Budzinski is: the verb base of the adjective modifier as the verb, and the adjective modifiee as the object (Col. 91 lines 31-35). Therefore there is proper motivation to combine the teachings of Holtzman et al, Fan, and Budzinski in order to

have a default operation that is followed when compared terms are not found within an opinion dictionary.

Re claim 13, Holtzman et al combined with Fan teach for identifying opinions from text utilizing an opinion dictionary. When read in light of the specification, the function of an opinion rule base is synonymous with the function of an opinion dictionary. However both Holtzman et al and Fan do not disclose the description of grammatical components and the process involved when a match is not found. Budzinski discloses the identification of nouns, adjectives, prepositions, and verb phrases (Col. 19 lines 35-65). Therefore there is proper motivation to combine the teachings of Holtzman et al, Fan, and Budzinski in order to assign the opinion polarity to a selected term while utilizing an opinion rule base (dictionary) to identify grammatical components.

***Examiner's Note***

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not

constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed....” In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571) 270-1847. The examiner can normally be reached on 7:30 am - 5:00 pm , alt. Fridays.

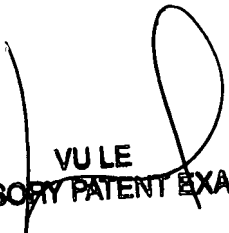
If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Vu Le can be reached on (571)-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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